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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,557

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Yoav Kapah

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05/28/2008

NATH & ASSOCIATES
112 South West Street
Alexandria, VA 22314

EXAMINER

SALVATORE, LYNDIA

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,557	Applicant(s) KAPAH, YOAV	
	Examiner Lynda M. Salvatore	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's remarks filed 1/30/08 have been fully considered and entered. Applicant's remarks are not found persuasive of patentability for reasons set forth herein below.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 9-10 and 12-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al., US 4,916,000 in view of Anonymous RD 305027 A (*note: a complete translation of the RD document will be provided in the next Office Action*).

Applicant argues a lack of motivation to combine the cited references on the grounds that the cited prior art teaches away from the present claims. Specifically, Applicant argues that the cited secondary reference teach away impregnating the fibers as taught by the primary reference of Li et al. Applicant further argues that the motivation as argued by the Examiner to employ the para-aramid fibers in the RD in the Li et al., article is not supported by the teachings in the prior art. These arguments are not found persuasive.

With regard to Applicant's argument that the cited secondary RD reference teach away from impregnating the fibers as taught by the primary reference of Li et al, the Examiner asserts that the secondary RD reference was relied upon to teach that para-aramid fibers are used to form ballistic composite materials, namely helmets. As such, it is the position of the Examiner that it is not relevant how the ballistic materials are formed with the resin.

In response to Applicant's arguments that the motivation as argued by the Examiner to employ the para-aramid fibers in the RD in the Li et al., article is not supported by the teachings in the prior art, the Examiner maintains that since both the primary and secondary references teach forming ballistic type materials the disclosed aramid and para-aramid fibers appear to be functionally equivalents for the intended use and can be used interchangeably. There is nothing on record to evidence that the ballistic composite of Li et al., could be alternatively formed with para-aramid fibers. Applicant is invited to evidence otherwise. The Examiner maintains that specific motivation to substitute the aramid fibers of Li et al., with the para-aramid fibers taught in the RD reference could easily be found in cost, availability and manufacturing and/or to expand the number of suitable high strength fiber options.

With regard to Applicant's arguments that the primary reference of Li et al., does not exemplify the use of aramid fibers, but rather uses polyethylene, it is respectfully pointed out that Li et al., broadly discloses employing the use of aramid filaments (column 6, 5-10). It is the position of the Examiner that though the use of aramid fibers may not be exemplified the broad disclosure directed to employing aramid fibers cannot be ignored. It is the position of the Examiner that a composite formed from aramid fibers is encompassed by the disclosure of Li et al.

With regard to Applicant's arguments that the primary reference of Li et al., does not teach a ballistic helmet comprising the claimed para-aramid fibers having the claimed thickness and areal density, it is respectfully pointed out that Li et al., clearly teach a composite comprising 30 layers each having a thickness of .02cm and an areal density of 6.02 Kg/m² for use in helmet applications. Though, Li et al., does not specifically exemplify the use of aramid fibers in the

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examples evidencing the thickness and areal density, the claimed structural features are clearly encompassed by the disclosure of Li et al. The Examiner acknowledges that the Li et al., does not specifically teach employing para-aramid fibers, however the Examiner maintains that based on the disclosure of the RD reference one of ordinary skill in the art would recognize that the aramid fibers of Li et al., could be easily substituted with the para-aramid fibers used to form the ballistic helmet disclosed in the RD reference. Thus, the Examiner asserts that the combination of cited prior art renders the instant claims obvious.

To reiterate, the patent issued to Li et al., teach ballistic composite material comprising 164 fabric layers comprising aramid fibers and resin matrix (column 18, 40-45, column 10, 35-50 and column 6, 5-10). With regard to the thickness limitations, Li et al., teach a composite comprising thirty layers each having a thickness of .02cm (.2mm)(column 19, 15-36). Thus, Li et al., inherently meets the total thickness limitations presently set forth. With regard to the areal density limitations, Li et al., teach a composite panel with an areal density of 6.02 kg/m² (column 19, 40-45). With regard to the pressure bonding limitations, Li et al., teach a pressure up to 69,000 kpa (703 kg/cm²) (column 11, 1-21). Li et al., teach that the composite is suitable for use in helmet applications (column 16, 63-69).

Li et al., does not specifically teach the claimed para-aramide fibers, however, the '027 disclosure teach a ballistic composite comprising the claimed para-aramide fibers. Said composite is suitable in the formation of helmets (abstract). It is the position of the Examiner that it appears high strength para-aramide fibers of the '027 disclosure are as suitable for ballistic use as the aramide fibers taught by Li et al. It is therefore the position of the Examiner that based on the combined disclosures a skilled worker in the art would easily recognize that either aramide or

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para-aramide fibers could be employed in the formation of ballistic type articles. Motivation to employ para-aramide fibers over aramide fibers could be found in cost, availability and ease of manufacturing. Therefore, motivated by the desire to produce a ballistic material suitable in the formation of helmets, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the ballistic composite material of Li et al., with the para-aramide fiber taught in the '027 disclosure.

4. Claims 1-8 and 11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al., US 4,916,000 in view of Anonymous RD 305027 A (*note: a complete translation of the RD document will be provided in the next Office Action*) and further in view of Bottger et al., WO 00/42246.

The above arguments with respect to the Li et al., and RD 305027 references are maintained as set forth above.

Applicant argues a lack of motivation to combine the cited art references. Applicant argues that the combination of prior art does not teach the claimed areal density or thickness. Applicant acknowledges that the primary reference of Li et al., does teach an example comprising 30 layers which meet the claimed density and thickness limitations, but argues that such an example cannot be relied upon because there are so many unknowns. Applicant further argues that in the example which teach 30 layers (example 3), also has an inferior V50 performance result. In response, the Examiner reiterates that disclosure of Li et al., clearly encompass the claimed structural features of the composite, namely the claimed density and thickness. With regard to the inferior V50 performance, said feature is irrelevant. Applicant is not concerned with the V50 performance.

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Regarding claim 5, Applicant argues that there is not sufficient disclosure to evidence that the resin matrix used constitutes less than 12% of the weight of the component. This is not found persuasive. Li et al., teach coating the fabrics with resin matrix in an amount ranging from 1% to 150% (column 10, 40-55 and column 11, 20-column 12, 15).

Regarding the combination of cited prior art, the Examiner maintains the sufficient motivation exists to further combine the Bottger reference. Bottger et al., teach ballistic grade fabrics comprising para-amide fibers having an areal density of 100 g/m^2 (page 2, 29 and page 5, 10). Since each individual layer contributes to the overall weight and thickness of the final shell composite, it is the position of the Examiner that it would be obvious to one having ordinary skill in the art at the time the invention was made to form the individual layers in the ballistic composite of Li et al., in view of RD '027 with fabrics having desirable areal densities as taught by Bottger et al. As such, it is the position of the Examiner that the combination of prior art renders the instant claims obvious.

To reiterate, see the above rejection with respect to the Li et al., and RD 305027 references. With specific regard to claim 5, Li et al., teach coating the fabrics with resin matrix in an amount ranging from 1% to 150% (column 10, 40-55 and column 11, 20-column 12, 15).

The combination of Li et al., in view of RD '027 does not teach the areal density of the individual fabric layers, however, the published patent application issued to Bottger et al., teach ballistic grade fabrics comprising paraamide fibers having an areal density of 100 g/m^2 (page 2, 29 and page 5, 10).

Since each individual layer contributes to the overall weight and thickness of the final shell composite, it is the position of the Examiner that it would be obvious to one having

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ordinary skill in the art at the time the invention was made to form the individual layers in the ballistic composite of Li et al., in view of RD '027 with fabrics having desirable areal densities as taught by Bottger et al.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynda M. Salvatore whose telephone number is 571-272-1482. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lynda Salvatore/
Primary Examiner
Art Unit 1794
5/23/08

Serial Number 	Application No. 10/529,557	Applicant(s) KAPAH, YOAV	
	Examiner Lynda M. Salvatore	Art Unit 1794	